The Educability Of Indian Children In Reservation Schools

By

BONNIE LELA CRUMP

Southeastern State Teachers College
Contributions to Education No. 3

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF DOCTOR OF PHILOSOPHY IN THE
FACULTY OF PHILOSOPHY, COLUMBIA UNIVERSITY

Published by
Southeastern State Teachers College
Durant, Oklahoma
1932

ACKNOWLEDGMENTS

This study has been made possible by the co-operation of a large number of individuals and institutions. The writer wishes to thank her dissertation committee: Professor Leta S. Hollingworth, Chairman; Professor Patty S. Hill; Dr. Mary M. Reed; and Dr. Edwin H. Reeder. These members of the faculty of Teachers College, Columbia University, gave helpful guidance and were sources of inspiration to the author.

Thanks are due Hon. John S. Vaughan, State Superintendent of Public Instruction for Oklahoma; to Superintendent Calhoun, who has charge of the Government Schools for the Five Tribes of Oklahoma, and to the principals of each of the schools supplying children for the study.

Professor Henry D. Rinsland, Bureau of Research, Department of Education, University of Oklahoma, gave generously of his time in looking over a portion of the statistical treatment and in making valuable suggestions as to the further handling of the data.

Special mention is due Dr. Genevieve L. Coy, Associate in Nursery School and Kindergarten-First Grade Education; Miss Gertrude L. Belser, Secretary to the Committee on Higher Degrees, Teachers College; Dr. R. E. Crump, Dean of Oklahoma Baptist University, for help and inspiration.

BONNIE LELA CRUMP

Shawnee, Oklahoma.

CONTENTS

TABLES

APPENDIX

CHAPTER I

Before the advent of intelligence tests psychologists undertook to determine racial differences by measuring reaction time, memory, and the relative sensitivity of the various sense organs of the different racial groups.

The earliest recorded psychological experiment of this kind in which Indians were included is that of Bache (1) in 1895. He experimented with the reaction time of 12 whites, 11 negroes, and 11 Indians. He reached the conclusion that of these experimental groups the reaction time of the Indians was shortest while that of the whites was longest.

Bruner (2) in 1908 investigated the auditory sense of 156 whites, 63 American Indians, 137 Filipinos, 44 Japanese, and some other racial groups. He found the whites to be slightly superior in auditory acuity.

Woodworth (28) in 1910 gave sensory motor tests to 200 whites, 137 Filipinos, 163 American Indians, and to groups of Ainus and others. He found no difference in general among the racial groups.

With the publication in 1908 of the "Binet-Simon Scale of Intelligence" and its introduction into America the efforts to determine the comparative intelligence of racial groups were greatly stimulated. The first testing making use of a revision of the Binet tests was done by the Rowes in 1914. The tests were administered by Helen M. and E. C. Rowe in an Indian School at Mount Pleasant, Michigan. The Goddard revision of the Binet-Simon tests was used. 547 whites were tested for comparison with the 268 Indians. The grades ran from kindergarten through the eighth grade. The results were reported in 1914 by E. C. Rowe (23) in terms of relative mental age. He states that 94 per cent of the Indian children were mentally be-

low the whites. At that time the I. Q. was not in general use. Rowe took no account of variations in degree of Indian blood. He states (p. 454): "Tests were given to children of Indian descent in the United States Government School located at Mount Pleasant, Michigan." Three statements made by Rowe (p. 456) are quoted:

1. The Indians are everywhere inferior to the whites.
2. The Indian children average much older than the white children with whom they are to be compared.
3. The Indians are relatively weaker in tests involving comprehension and definition than in tests of a more purely perceptual or memory nature.

Hunter and Sommermeier (18) 1921, gave the Otis Intelligence Test (1919 edition) to 715 mixed and full blood Indians of known degree of Indian blood at Haskell Institute, Lawrence, Kansas. The purpose of the experiment is stated (p. 257): "It was our intention to compare not only Indian scores and white scores but also the scores made by the various degrees of Indian blood." The following statement is quoted from Page 274:

"Table 7 showing the median scores for the two sexes in the several bloods, indicates that the factor of sex does not account for the racial differences found. Although there is no consistent age differences between the sexes the girls are slightly superior to the boys in all bloods save the one-quarter. Each sex shows a decrease in median score with a decrease in amount of white blood. This fact outweighs in importance the tendency for the slightly more intelligent sex (giris) to predominate numerically in the whiter bloods."

This was the first effort to apply the method of correlation in racial studies. When they correlated intelligence-test score with degree of white blood, holding constant days of attendance at school and age, they obtained a correlation of 0.41. They arrived at the following conclusion (p. 277):

"There is a positive correlation between increasing degree of white blood in the American Indian and score on the Otis intelligence test which would seem to indicate a racial difference, probably of intelligence although possibly of temperament."

The authors state that the Haskell students tested came from many different parts of the United States and represent 65 tribes and 14 different tribal mixtures. In order to enter the Institute they must (according to rule) be at least 14 years old, have the equivalent of third grade schooling and have a physician's certificate of good health.

Garth (10), 1922, used the National Intelligence Test on 122 mixed blood Indians; 176 full blood Plains Indians. 249 full blood Plateau Indians; 82 full blood Navajo Indians; and 305 Mexicans. The results were used to rank the various groups according to intelligence. The ranks were as follows:

Rank 1: 122 mixed blood Indians
Rank 2: 305 Mexicans
Rank 3: 176 Plains Indians
Rank 4: 249 Plateau Indians
Rank 5: 82 Navajo Indians

Garth (9) and others employed the National Intelligence Test to 1,050 full blood Indians. They found a medium IQ of 68.6. These Indians are said to be fairly representative of all tribes of Indians, such as Sioux, Cherokee, Arapaho, Navajo, Ute, and Pueblo, located in the southwest. The study included the fourth to ninth grades. The median IQ's found for each grade are given below:

Median IQ: fourth grade, 48.5
Median IQ: fifth grade, 66.1
Median IQ: seventh grade 75.6
Median IQ: Seventh grade 75.6
Median IQ: eighth grade 80.0
Median IQ: ninth grade, 81.8

This experiment was reported in 1925.

Goodenough (15) applied the Goodenough non-language test to various racial groups in 1926. A median IQ of 85.6 was found for a group of 79 Indians. This median IQ was higher than the median IQ's of negro groups, but less than the median IQ's for the other groups, such as Jews, Spanish, Mexicans, Italians, Armenians, and Americans. The Jews ranked highest with a median IQ of 106.3

for the 55 Jews tested. The American group came next with a median IQ for 500 Americans of 100.3.

Fitzgerald and Ludeman (4) employed the National Intelligence Test, the Otis, and the Terman tests on 83 Indians, mixed and full blood, in 1926. A median IQ of 87 was found.

Garth (12) and others in 1927 studied the relation of degree of Indian blood to intelligence, using the National Intelligence Tests. 765 mixed blood Indians were tested. The IQ's found were:

1-4 degree, IQ: 77
1-2 degree, IQ: 75
3-4 degree, IQ: 74

Correlation of degree and IQ is 0.42.

Harvey C. Hansen (17) in 1927 undertook to determine whether or not Indians do better on non-verbal tests than on verbal tests. He applied the two types of tests to 150 Indian children found in the Dwight Indian Training School at Marble City, Oklahoma, and in Sequoyah O. T. School at Tahlequah, Okla. Nearly all the children were Cherokee blood with a few individuals from each of several other tribes. 75 were full bloods. No children tested were of less than one-half blood. The following tests were used:

Non-Verbal

1. Meyers Mental Measure
2. Pinter Non-Language Mental Test

Verbal

1. McCall Multimental Scale, Elementary School, Form 1.
2. Otis Self-Administering Tests of Mental Ability, Intermediate Examination, Form A.

Four of Hansen's conclusions are quoted:

1. The sampling was such that the pupils tested are fairly representative of the usual Indian school. Everywhere there are old and young in the same grades. Everywhere the bulk of the Indian pupils are in the grades selected in this study (3 to 7) or in lower grades.

2. Indian pupils quite consistently obtain much lower scores than those secured by white pupils. Their median

Mental Age is from 2 1-2 to 5 years lower than their median Chronological Age.

4. Indian pupils obtain better scores on non-verbal than on verbal tests. The difference in Mental Age is about 1 1-2 years.

5. The non-verbal scores much more nearly approximate white standards, though even here the Indian pupils are nearly 3 years behind white children.

Garth (13) and others applied the Otis Classification Test to 1,000 full blood Indians in 1928. A median IQ of 70 was found. The IQ rises with school grade. Education is thought to be a strong factor.

In 1928 Garth and Garrett (6) tested 942 mixed blood Indians, 1,313 full blood Indians and 387 whites. The National Intelligence Tests were used. Public school students were found to be slightly superior to United States school Indians, but the whites were superior to all.

In the same year Jamieson and Sandiford (19) tested 717 mixed blood Southern Ontario Indians with the National Intelligence Tests, and non-language Pintner-Paterson Performances. Mixed Indians have a non-language IQ of 97, Performance IQ of 92.

Owen D. Smith, as reported by Garth in "Race Psychology" (11. p. 76), tested 667 full blood Indians of the southwest in U. S. Indian Schools. He found a median IQ of 71.6 for the Pintner non-language test.

More recently, 1931, Garth (11) has published "Race Psychology, A Study of Racial Mental Differences." In this book Garth states that about 25,000 negroes have been tested in America and adds: "Next in line in point of number is the American Indian, of whom there have been 6,857 studied in one way or another in 29 of the studies reported." (p. 57). On page 75 he says: "So far as we know the only use of the Binet with Indians was made by Helen M. and E. C. Rowe . . . . Their results were reported in 1914 by E. C Rowe in terms of relative mental age. . . . So, unfortunately, we are unable to give Binet IQ's for Indians, since no study is available in which they are supplied. We shall have to make use of the group IQ's . . ."

TABULAR SUMMARY OF EXPERIMENTAL TESTS AND PSYCHOLOGICAL INVESTIGATIONS INVOLVING INDIANS

(Largely selected from Garth's Race Psychology and rearranged chronologically)

Date	Investigator	Race	No. of Cases	Test	Results
1895	Bache	Whites	12	Reaction Time	Indians quickest Whites slowest
		Negroes	11		
		Indians	11		
1908	Bruner	Whites	156	Auditory Sense	Whites slightly Superior
		Am. Indians	63		
		Filipinos	137		
		Ainus, etc.	44		
1910	Woodworth	Whites	200	Sensory Motor	No difference in general
		Filipinos	137		
		Am. Indians	163		
		Ainus, etc.			
1914	Rowe	Indians	264	Binet	94% of Indians below age
		Whites	547		
1921	Hunter and Sommermeier	Mixed and Fullblood Indians	715	Otis Intelligence	Correlation of 0.41 between degree of white and Indian blood
1922	Garth	Indians			
		Mixed-blood	122	N. I. T.	Rank 1
		full-blood of Plains	176		Rank 3
		full-blood of Plateau	249		Rank 4
		Full-blood Navajo	82		Rank 5
		Mexicans	305		Rank 2
1925	Garth	Am. Indians	1,050	N. I. T.	Med. IQ 68.6
1926	Goodenough Group:				
		Americans 1	500	Goodenough non-language intelligence	Q 10.3 Med. IQ, 100.3
		Armenians 2	123		2 Med. IQ, 91.8
		Italians 3	456		3 Med. IQ, 87.5
		Spanish Mexicans 4	367		4 Med. IQ, 87.2
		Negroes (Cal) 5	67		5 Med. IQ, 82.7
		Negroes (South) 6	613		6 Med. IQ, 76.5
		Indians 7	79		7 Med. IQ, 85.6
		Jews 8	55		8 Med. IQ, 106.3
		Miscl.	181		
1926	Fitzgerald and Ludeman	Mixed and full-blood	83	N. I. T. Otis Terman	Med. IQ, 87
1927	Hansen	Indians		Non-Verbal:	Indians
		mixed and	75	1. Myers	did better
		full-blood	75	2. Pintner	non-on Non-verbal
				language	Than on verbal
				Verbal	
				1. McCall mental Scale	multi-tests
				2. Otis	
1928	Garth, et. al.,	full-blood Indians	1,000	Otis classification	Med. IQ, 70
1928	Garth & Garrett	Mixed and full-blood	942 1,313	N. I. T.	Public school students Slightly Superior to U. S. School Indians, but whites superior to all.
		Indians			
		Whites	387		
1928	Jamieson & Sandiford	Mixed blood Indians	717	N. I. T. & non-language of 97 P-P Performances	Mixed bloods have non-language IQ Performance IQ of 92
1930	(?) Smith, Owen D.	full-blood Indians Southwest	667	Pintner non-language mental test	Med. IQ, 71.6

Individual tests.

A study of the above table shows that the Binet tests were used by Rowe who reported his results in 1914. The Goodenough test was used by Goodenough in 1926. The Pintner Performance Test was used by Jamieson and Sandiford in 1928.

Group tests.

The group tests have been used in the majority of the experiments. The principal group tests used were: N. I. T.; Otis; Terman; and Pintner non-language.

How the present study differs from previous investigations:

The investigators mentioned above did not have in mind the problem of determining differences due to tribe and accordingly took their samplings from Indians without confining their studies to particular tribes.

The present study is unique in that (1) it uses a battery of individual intelligence tests; (2) it is limited to the first three grades; (3) it makes a study of Indians in government reservation schools. (4) it is confined strictly to full blood Indians of the Five Civilized Tribes of Oklahoma; and (5) all of the tests were administered and the scoring was done by the investigator.

It is hoped that the present study will throw some additional light upon the mooted question of the intelligence of Indian children in so far as their intelligence can be tested by tests standardized by and for white children in the environment of white children.

It is admitted that the tests may be in some respects unsuited for Indian children in the environment of the Indian reservation. This admission applies particularly to the Binet tests. Garth (6, p. 179) says: "The intelligence test, when applied to Indians, measures social opportunity as well as just intelligence, which it alone measures in the case of the white child in his ordinary white social context."

The results should be of use to those who have to do with the planning of curricula for Indian reservation schools and to those upon whose shoulders rests the responsibility of evolving a philosophy of education which will determine the purpose to be pursued in the education of Indian children.

The Report of the National Advisory Committee on Education (22. p. 53) recommends "continuing surveys" for mapping out programs in Indian education. Studies such as this might well become an essential part of such surveys. The Committee says:

"No program of Indian education should be mapped out or inaugurated without provision for initiating and continuing surveys of all the limiting conditions and necessities of the Indian's old and changing life. Then, for the first time, the kind of an educational instrumentality which is to be used will be genuinely planned for its task."

CHAPTER II

METHODS USED AND DATA COLLECTED FOR THIS RESEARCH

Samplings for each nationality

Fifty full blood children from each of the five civilized tribes of Oklahoma were given the three individual intelligence tests. The degree of blood was determined from government rolls. The government has complete records of each child and of his ancestry. The fact that the degree of blood determined the obligations of the government renders it necessary that very accurate records be kept. Each government school is supplied with records which show the exact degree of blood for each child in the school. Indian children in non-government schools, such as St. Agnes Academy at Ardmore, are allotted a certain amount per child for school purposes. Thus the non-government schools also have accurate records of the blood-degree of their Indian students. These government records are thus the most accurate available sources for the determination of the nationality of each child and of his blood-degree. These records were used in selecting the full blood children for each tribe.

On account of the blood requirements, it was found impractical to confine the investigation to children of the first grade as was at first contemplated. The number of full blood children of each nationality to be found in the schools is limited. Still less feasible would have been the selection of an age group. It would have been practically impossible to have found fifty ten-year-old Chickasaw children of full blood in the schools. The same is true for all of the tribes. In order to secure fifty full blood children for each tribe it was found necessary to test children from the first through the third grades.

For the reasons given above it was decided to use both boys and girls. One tribe, the Chickasaws, is represented by practically all girls for the reason that no school for boys existed in the Chickasaw nation. Without exercising any selection for that purpose some of the tribes are represented by boys and girls in almost equal numbers.

Selection of the children to be tested

Where a choice was possible an effort was made to secure students to represent each tribe who were "average" or above in their school work. No feeble-minded children, who were known to be such, were examined. A further condition for the Indian children was that they should be able to speak and understand the English. Since this latter condition could be met by almost all of the children, it did not function strongly as an element of selection. Thus the groups were selected upon the bases of ***their being able to do primary grade work reasonably well,*** their being able, at least, to show some improvement in something during the school year, and ***their having no serious language handicap.***

The number of full blood children excluded upon the above bases is as follows: four Chickasaws, ***one*** of whom had a serious language handicap; four Cherokees, ***two*** of whom had a serious language handicap; three Creeks, ***one*** of whom had a serious language handicap; two Choctaws, ***one*** of whom had a serious language handicap.

It is important to note that Indian children who do satisfactory primary grade work (and hence are included in this study), generally have to be much older than white children are for this achievement. Garth also found this to be the case, especially with the full blood indians in the government schools.

Methods and Materials

The method used was to test fifty full blood children of each of the five tribes by means of three individual intelligence tests. The children were in grades one to three inclusive.

For the individual examinations the Stanford Revision of the Binet-Simon Intelligence Scale was used. This scale is too well known to require description and is generally accepted as the most reliable measure that we have of a child's mental capacity. This was supplemented by a non-language scale since it was anticipated that the Indians might be handicapped by language difficulties.

For the non-language test we chose the Pintner-Paterson Performance Scale, the only scale of tests so arranged that the final score on the complete scale is expressed in terms of mental age. This scale is widely used and requires no detailed account. For the experimental work to be reported the shorter scale consisting of the following tests was used:

1. Mare and Foal
2. Seguin Form Board
3. Five Figure Board
4. Two Figure Board
5. Casuist Form Board
6. Manikin Test
7. Feature Profile Test
8. Ship Test
9. Healy Picture Completion I.
10. Knox Cube Texas

A third individual test known as the Goodenough Intelligence Test was used. This scale attempts to measure the intelligence of the child by the results of his efforts to "draw a man." The test is easy to administer, but the scoring is tedious and highly technical.

Goodenough (14, p. 11) says:

"A comparison between the drawings made by civilized children and those made by children of primitive races who have spent several months in a mission school where they have had plenty of opportunity to use pencil and paper and to look at pictures is perhaps not grossly unfair."

Ivanoff, quoted by Hall, (16, p. 393), says:

"There is a positive correlation between the drawings and intelligence and this correlation is higher with girls than with boys; if a girl draws well, she is more likely to be a good scholar than is the boy of like ability."

McCarty, (20, p. 276), says:
"The most universal mode of human expression, other

than oral language and gesture, is drawing. . . . Drawing is also among the earliest instruments for the expression of ideas in early childhood."

And further:

"All studies of the content of children's drawings agree in designating the human form as the subject of major interest among beginners."

Administration of Tests:

All of the tests were administered by the author and scored by her. For greater accuracy the scoring was rechecked by the author and a thoroughly trained assistant.

Individual Testing:

It was thought the Indian children would like to "draw a man" and in the beginning this test was given first. But after a few tests were given it was found that a better response was secured on this test after the child became more accustomed to the personality of the tester. So the order of giving the tests was changed and the performance tests were given first. The Indians thought this to be "playing a game" and liked the work. After a period of outdoor play, the child was given the Binet tests and finally the Goodenough. Every effort was made to motivate the testing and to enlist the child's interest. The testing conditions were good. The schools furnished a private room to which the children came when requested. The Indian children did not like the Binet tests, as a rule, were easily discouraged and wanted to give up. But on the performance tests they manifested great patience and persistence and often asked to be allowed to continue after the time was up. Every precaution was taken to follow directions exactly both in giving and in scoring the tests.

Change in Method

Alternative tests were used for vocabulary tests wherever possible because of the extreme slowness with which the Indian children responded to vocabulary tests. In general, the comprehension of English was good, but

the Indians had great difficulty in "defining" English words.

In this connection Terman, (25, p. 136), says:

"In year VIII it would be permissible to substitute the alternative test of naming six coins, instead of the vocabulary test, in the case of a subject who came from a home where English was not spoken."

The Stanford-Binet results were all checked by the author and re-checked by an experienced assistant. The mental ages and intelligence quotients were computed by the author and the computations were re-checked by the assistant.

The performance test scores and median mental ages were checked by the author and re-checked by the assistant.

The Goodenough test scoring was highly technical and required considerable preliminary practice. This was afforded by the sample scoring in Goodenough's text book. The scoring was done by the author and re-checked by the author and an assistant.

Plan of the study:

The plan of this study then has been: To study intensively by means of a battery of individual intelligence tests, fifty full blood Indian children, boys and girls, of each of the Five Civilized Tribes of Oklahoma. The children were found in government Indian reservation schools. All of the children were within the first three school grades.

CHAPTER III.

Presentation of test results

Table No. 1 is a distribution of the I Q's of the 250 full blood Indian children found by means of the three individual intelligence tests: Stanford-Binet, Pintner-Paterson, and Goodenough. The mean of I Q's found on Stanford-Binet is 90.38; on Pintner-Paterson, 93.56; and on Goodenough, 92.83.

It is interesting to note that the means of the three distributions are so nearly equal. However, it is not the intention of the author to imply that the I Q's obtained on the various tests are equivalent. Psyche Cattell in School and Society, March 29, 1930, p. 442, says: "The above study is a warning . . . against the errors that may result from using the I Q's obtained from different tests or at different ages as equivalents." She says further: "The median I Q's of two tests may compare favorably with one another, but give widely divergent results at the extremes."

It is to be noted from the standard deviations obtained that there is much greater variability for the Goodenough tests than for either of the other two tests.

TABLE NO. I.

Distribution of I Q's of 250 full blood Indian children of Five Civilized Tribes of Oklahoma on Binet, Pintner-Paterson, and Goodenough tests. The group is made up of 138 girls and 112 boys.

I Q	S-Binet	Pintner-Pat.	Goodenough
35——39	0	0	1
40——44	3	1	3
45——49	4	3	2
50——54	6	7	14
55——59	6	7	13
60——64	16	14	19
65——69	11	12	7
70——74	14	14	18
75——79	19	22	8
80——84	26	15	19
85——89	16	19	17
90——94	17	19	18
95——99	21	21	17
100—104	24	18	19
105—109	17	20	8
110—114	21	11	17
115—119	10	6	9
120—124	3	10	6
125—129	1	9	10
130—134	6	7	4
135—139	4	3	3
140—144	2	6	5
145—149	1	2	2
150—154	2	1	2
155—159	0	3	0
160 and above	0	0	9
N	250	250	250
Mean	90.38	93.56	92.83
S. D.	22.25	23.50	29.78
25%ile	75.70	76.00	71.00
50%ile	91.20	93.00	91.50
75%ile	106.30	108.90	111.30
Q	15.30	16.40	20.15

Comparing the median I Q of 91 (the 50 percentile in the table) found for the Indian children on the Stanford-Binet test with the medians found for white children on the Stanford-Binet, we have a median I Q found by Ter-

man, using 905 unselected white children, of 101. In the Oklahoma City schools 4,874 white children had a Stanford-Binet median of 104. Our Indian group, therefore, has a median IQ considerably below that of these groups of whites.

Table No. 2 is a distribution of I Q's obtained by 112 boys and 138 girls, all of the Indian reservation schools, on the three individual intelligence tests. The girls made a better average than the boys on Stanford-Binet and on

TABLE NO. 2

I Q	Boys Binet	Girls Binet	Boys P-P	Girls P-P	Boys Good.	Girls Good.
40——44	1	2	0	1	3	1
45——49	1	3	1	2	2	0
50——54	4	2	3	4	6	8
55——59	4	2	3	4	8	5
60——64	10	6	5	9	9	10
65——69	5	6	4	8	2	5
70——74	9	5	9	5	5	13
75——79	11	8	8	14	2	6
80——84	11	15	11	5	11	9
85——89	8	8	7	11	8	8
90——94	5	12	9	10	8	10
95——99	7	14	14	7	6	11
100—104	12	12	9	10	9	10
105—109	4	13	7	11	3	5
110—114	8	13	5	7	4	13
115—119	5	5	2	4	3	6
120—124	1	2	7	3	3	4
125—129	1	0	2	7	3	6
130—134	3	3	3	4	2	2
135—139	2	2	1	2	2	1
140—144	0	2	1	5	5	0
145—149	0	1	0	2	1	1
150—154	0	2	0	1	2	0
155—159	0	0	1	2	0	0
160 & above	0	0	0	0	5	4
N	112	138	112	138	112	138
Mean	87.	93.14	92.21	94.66	93.56	92.23
S. D.	21.60	22.55	21.66	26.58	33.20	26.63
25%ile	71.70	80.20	76.90	75.53	65.00	72.10
50%ile	85.00	94.60	92.80	93.00	90.00	92.00
75%ile	103.30	105.10	105.70	111.80	112.50	111.00
Q	15.80	12.40	14.40	18.13	23.70	19.40

Pintner-Paterson, but fall slightly below the boys on the Goodenough test. The average I Q on Stanford-Binet for boys is 87; for girls, 93.14. On Pintner-Paterson the average for boys is 92.21; girls, 94.66. On the Goodenough the

boys secured an average of 93.56 while the girls fell to 92.23.

The average difference between boys and girls on the Stanford-Binet is 6.14 in favor of the girls. The girls also excel the boys on the Pintner-Paterson by an average difference of 2.45. However, on the Goodenough test the boys proved superior to the girls by a small average difference of 1.33 points.

To determine the reliability of the differences found we calculate the P. E. (diff) in each case and determine the ratio of the obtained difference, D, to P. E. (diff) by Garrett's method (5, p. 136). We find:

On S-B averages, D-P. E. (diff) 3.19
On P-P averages, D-P. E. (diff) 1.16
On Goodenough D-P. E. (diff) ..... .50

In order to insure complete reliability we must have a ratio D-P. E. (diff) of at least 4. Since our ratios in each case are less than 4, we have to conclude that the differences found are not completely reliable.

To continue our comparison of the sexes we use Pearson's Coefficient of Variation given by Garrett (5, p. 41) and calculate relative variability. We find:

138 girls are 81.4% as variable as 112 boys on Goodenough.

112 boys are 83.6% as variable as 138 girls on Pintner-Paterson.

138 girls are 97.5% as variable as 112 boys on Stanford-Binet.

The whole group is 77% as variable on Goodenough as on Stanford-Binet.

The whole group is 98% as variable on Pintner-Paterson as on Stanford-Binet.

Table No. 3 shows the Stanford-Binet I Q's distributed according to the chronological ages of boys and girls. The boys from 5 to 9 have a higher median I Q than the

TABLE No. 3

Distribution of 138 full blood Indian girls and 112 full blood Indian boys on the bases of their CA's and Stanford-Binet intelligence quotients.

I. Q.	5-7		7-9		9-11		11-13		13-15		15-17		17-19	
	B	G	B	G	B	G	B	G	B	G	B	G	B	G
40——44													1	2
45——49												2	1	1
50——54							1			1	1	1	2	
55——59								1	2	2	2			
60——64					2		3	1	3	4	2	1		
65——69			2		2			2		1	1	3		
70——74				1	1	1	5	2	4	1				
75——79					3	4	3	2	5	1				
80——84		3	3	4	3	4	4	2		2				
85——89				1	3	3	4	1	1	3				
90——94		3	1	2	2	2	1	3	1	2				
95——99		1	1	7	5	5	1	1						
100—104	1		4	6	6	3	1	3		1				
105—109		4	2	5	2	2		2						
110—114	2	1	4	3	2	7		1						
115—119	1		2	3	2			2						
120—124		1	1			1								
125—129			1											
130—134	3	1	1	1		1								
135 & above		7	1											
N	7	21	23	33	33	33	23	23	16	18	6	7	4	3
25%ile	112	94	94	95	80	84	72	74	63	62	56	49	45	42
50%ile	117	109	106	101	96	98	79	91	74	75	60	63	50	44
75%ile	132	139	116	109	103	111	87	102	78	88	64	67	53	46
Q	10	23	11	7	12	14	8	14	8	13	4	9	4	2

girls. The older girls from 9 to 17 have higher median I Q's than the boys. The lower general average of the boys when grouped together is thus due to the poorer work done by the older boys from 9 to 17.

Table No. 4 shows that boys in the groups 5 to 7 and 7 to 9 have a slightly higher median I. Q. than the girls of the same age groups. The same is true for the age groups 13 to 15, 15 to 17 and 17 to 19. The girls 9 to 11 and 11 to 13 do slightly better than the boys. This is on the Pintner-Paterson Performance Tests.

Table No. 5, the Goodenough distribution, shows that the boys of all age groups except 17 to 19 do somewhat better than the girls.

TABLE NO. 4

Distribution of 138 full blood Indian girls and 112 full blood Indian boys on the bases of their CA's and Pintner-Patterson intelligence quotients.

	5-7		7-9		9-11		11-13		13-15		15-17		17-19	
I Q	B	G	B	G	B	G	B	G	B	G	B	G	B	G
40——44												1		
45——49													1	2
50——54					1	1				1	1	1	1	1
55——59								2	1		2	2		
60——64			1				2	2	2	5		1		
65——69					1	2	2	1		5		1	1	
70——74			2	1	1		5	1		2	1	1	1	
75——79		3		1	3	5	2	5	2					
80——84		1	2		1	1	3	1	3	2	2			
85——89				5	2	3	4	1	1	2				
90——94			1	6	4	2	1	1	3	1				
95——99	1		2	2	5	1	2	4	4					
100—104		3	4	5	5	1		2						
105—109	2	3	2	2	2	3	1	3						
110—114	1	2	2	3	1	2	1							
115—119		1	1		1	3								
120—124	2	2	1	1	4									
125—129			2	3		4								
130—134	1	2	1		1	2								
135 & above		4	2	4	1	3								
N	7	21	23	33	33	33	23	23	16	18	6	7	4	3
25 % ile	107	104	94	91	88	81	72	74	78	64	56	54	50	47
50 % ile	113	111	104	102	99	106	81	83	85	68	70	59	65	49
75 % ile	123	132	121	115	109	126	89	99	95	81	81	66	70	51
Q	8	14	14	12	11	23	9	13	9	9	13	6	10	2

TABLE NO. 5

Distribution of 138 full blood Indian girls and 112 full blood Indian boys on the bases of their CA's and Goodenough intelligence quotients.

I Q	5-7		7-9		9-11		11-13		13-15		15-17		17-19	
	B	G	B	G	B	G	B	G	B	G	B	G	B	G
40——44							1				1	1	1	
45——49					1				1					
50——54			1		1	1	1	2		2	1	2	1	1
55——59			1		1	1	4		2	1		1	1	1
60——64				3	2	1	2	3	2	2	2		1	1
65——69			1	1		3		2			1			
70——74				1	2	2	1	3	2	4		2		
75——79			1	2		2	1	1				1		
80——84			2	3	3	3	2	1	3	2	1			
85——89			2	1	2	3	2		2	5				
90——94			1	4	4	3	1	1	2	1				
95——99		3		2	4	3	1	3	1	1				
100—104			2	6	2	2	4	3	1					
105—109		2			2	1	1	2						
110—114	1	3	1	5	1	3	1	2						
115—119		1	1	3	1	2	1							
120—124		3	0	1	3									
125—129		3	2	1	1	2								
130—134		1	2											
135 & above	6	5	6		3	1								
N	7	21	23	33	33	33	23	23	16	18	6	7	4	3
25% ile	149	110	84	82	82	86	60	67	63	64	53	52	50	54
50% ile	163	123	113	99	96	91	84	83	82	75	63	58	55	58
75% ile	186	134	136	112	114	109	102	97	90	88	68	73	60	61
Q	19	12	26	15	16	12	21	15	14	12	8	11	5	4

CHAPTER IV.

Case studies of Indian children with Stanford-Binet I Q's of 130 and above.

An examination of Table 3 reveals that of the 250 full blood Indian children tested there were 15 whose Stanford-Binet I Q's were 130 or above. This is six per cent (6%) of the total. This percentage appears large but is explainable on the assumption that the 250 reservation school Indian children constitute a select group.

A case study of these individuals with high I Q's was undertaken with the idea of trying to discover whether or not there was anything in the ancestry or social conditions from which the children came to explain the unusual intelligence of the children. The opinions of the teachers were sought to determine whether or not tnese were in agreement with the results of the Binet tests.

The children were found usually to come from poor families with poor social and economic environment.

The teachers were in agreement with the test results in that they regarded these children as above the average in intelligence, in school attainment, and in qualities of leadership.

Below are given the data gathered concerning eleven of the fifteen children with I Q's of 130 or above. Data on the remaining four, who are full blood Creeks, could not be secured.

D. G. Girl; full blood Choctaw; CA 5-4; first grade; Binet IQ, 144; Pintner-Paterson IQ, 159; Goodenough IQ, 169.

The father is a poor farmer. His land is very little improved. There are no other exceptional children in the

family. Father has no plans for his daughter who is very young. DG is the second of three children.

In the opinion of her teachers DG is one of the two most popular girls in the schoolroom; one of the leaders in sport; above average in honesty. dependable; a willing helper.

H. H. Girl; full blood Chickasaw. CA 6-2; Binet IQ, 154; Pintner-Paterson IQ, 109; Goodenough IQ, 109.

HH's father is a day laborer. He is considered worthless. He drank "fire-water" and spent all the mother had. HH is the first child of a family of five girls and a baby boy. Her mother is an orphan and when in school was a good student.

L. B. Girl; full blood Choctaw; CA 5-9; first grade; Binet IQ, 140; Pintner-Paterson IQ, 122. Goodenough IQ, 160.

The father is a day laborer, not very ambitious. LB is the second of three children. She did not return to school the past year (1930-31).

S. B. Boy; full blood Choctaw; CA 6-10; first grade; Binet IQ, 131; Pintner-Paterson IQ, 134; Goodenough IQ, 150.

The mother is a degenerate, always drunk. SB is a very good boy. He is the only child.

I. M. Girl; full blood Choctaw. CA 5-4; Binet IQ, 131; Pintner-Paterson IQ, 113; Goodenough 1Q, 192.

The father is a poor farmer. While he still owns the land he has not been able to improve it. IM has one living sister.

One teacher classes IM as above the average, while another teacher says she is just an average child. The school nurse agrees with the first teacher. The sister of IM's father is a trained nurse.

The parents want IM to become a music teacher, but IM says she wants to be a "school teacher."

Her teacher says: "IM is one of the most thoughtful and the most perceiving of my pupils. She is kind and a willing worker, but somewhat reserved in her appearance and in her approaches. She is above the average in being dependable. She serves as a peace-maker and as an interpreter with the non-English speaking children."

Her sister, FM, is 9 years and 3 months old and has a Binet IQ of 112.

A. F. Girl; full blood Choctaw; CA 8-0; second grade; Binet IQ, 130; Pintner-Paterson IQ, 113; Goodenough IQ, 100.

The father is a farmer. He owns a farm, a number of horses, and a few cattle. AF is the sixth of seven children. Abilities of other children not known. Teacher's estimate: above average of class in intelligence. Excellent in industry. Achievement: average in written work; above average in oral work; good reader, both silent and oral; poor speller; good in language; fair in arithmetic; excellent in talking; extra willing to do.

A. F. G. Girl; full blood Cherokee; third grade; CA 9-2; Binet IQ, 134; Pintner-Paterson IQ, 136; Goodenough IQ, 117.

The father is dead. The mother is a housewife who takes in washing. She owns land in Bartlesville, lives in three-room frame house. No other known exceptional children in family. Teacher's estimate: above average of class in intelligence; excellent in industry; average in written work; a good reader. Fourth of five children.

E. B. Girl; full blood Choctaw; CA 6-0; Binet IQ, 139; Pintner-Paterson IQ, 158; Goodenough IQ, 163.

The father is a farmer; mother is dead; financial status of father is not known. Two other children of the family are considered exceptional in intelligence, industry, and achievement. EB is the second child in a family of four children.

V. P. Girl: full blood Choctaw; second grade; CA 6-4; Binet IQ, 136; Pintner-Paterson IQ, 118. Goodenough IQ, 126.

J. P. Girl; full blood Choctaw; second grade; CA 6-4; Binet IQ, 147; Pintner-Paterson IQ, 134; Goodenough IQ, 146.

VP and JP are twins. Occupation of father before his death, not known. They are fourth in a family of six children. Both are considered exceptional in musical ability and both have fine physiques. Above average in intelligence and excellent in industry. The mother is under the supervision of the county judge.

V. T. Girl; full blood Cherokee; second grade; Binet

IQ, 159; CA 5-8; Pintner-Paterson IQ, 123; Goodenough IQ, 123.

The father is a preacher. The mother is dead. Financial status of the father is not known. No other exceptional children in the family. Teachers' estimate: intelligence, good; industry, good; achievement, above average. Fifth child in a family of five children.

A study of the parentage of the exceptional children in this group reveals that the parents are farmers in very moderate circumstances, day laborers, one mother is a degenerate, one father is a confirmed drunkard, another is a preacher. The daughter of the last named, the preacher father, has the highest Binet IQ found, 159.

So far as the ancestry can be traced, there is a complete lack of any distinguished members in these families. There are no chiefs or leaders of any kind, if we except the preacher father. In one case listed above the exceptional child has two sisters who are also classed as exceptional by their teachers. There appears to be nothing in the ancestry to explain the outcropping of exceptional abilities in the children. Referring to Table No. 14, page 49 in the appendix, we see that the choice of occupations of full blood Indians is apparently limited very closely to the manual arts.

CHAPTER V

THE INFLUENCE OF TRIBE ON EDUCABILITY

The factor of nationality

Because of the limited number of children tested for each tribe and because of the fact that the groups tested are selected groups, namely, children in government Indian reservation schools, the differences found among the groups considered herein, full blood Indian children of the five civilized tribes of Oklahoma, are to be regarded as true for those groups only and not for the whole tribes represented by those groups. It is possible that corresponding differences would be found by testing random samplings of the various tribes. But we cannot be certain of this from a consideration of test results secured by testing selected groups. The comparisons made herein are, therefore, to be considered as tentative and are set down here as additional data contributed toward the final solution of the problem of racial differences. For the sake of brevity of statement the names of the tribes are used but the reader is to understand the tribes as represented by a selected group of reservation school children.

TABLE NO. 6

Distribution of Stanford-Binet intelligence quotients for full blood Choctaw, Chickasaw, Seminole, Cherokee, and Creek groups.

IQ	*Choctaw*	*Chickasaw*	*Cherokee*	*Seminole*	*Creek*
40—44	0	1	2	0	0
45—49	0	1	2	0	1
50—54	0	1	2	2	1
55—59	0	2	3	1	0
60—64	2	4	4	5	1
65—69	5	3	2	2	0
70—74	1	3	1	4	5
75—79	5	1	4	4	4
80—84	6	5	2	10	3
85—89	1	3	5	2	5
90—94	1	4	4	6	2
95—99	6	5	3	3	4
100-104	4	6	2	5	7
105-109	4	4	4	2	3
110-114	6	2	4	4	5
115-119	1	3	2	0	4
120-124	0	2	0	0	1
125-129	1	0	0	0	0
130-134	2	0	2	0	3
135-139	1	0	1	0	1
140-144	2	0	0	0	0
145-149	1	0	0	0	0
150-154	1	0	1	0	0
N	50	50	50	50	50
Mean	98	87	87	84	96
S. D.	23.51	20.58	26.03	18.09	20.36
25%ile	79	70	64	73	80
50%ile	98	91	88	83	98
75%ile	112	103	106	97	111
Q	16.5	16.5	21	12	15.5

TABLE NO. 7

Distribution of Pintner-Paterson intelligence quotients for full blood Choctaw, Chickasaw, Seminole, Cherokee, and Creek groups.

IQ	*Choctaw*	*Chickasaw*	*Cherokee*	*Seminole*	*Creek*
40—44	0	1	0	0	0
45—49	0	1	2	0	0
50—54	1	1	3	1	0
55—59	0	3	2	2	0
60—64	4	5	2	1	2
65—69	3	6	0	1	2
70—74	0	4	4	3	3
75—79	3	6	7	4	3
80—84	3	1	6	4	2
85—89	4	3	5	4	2
90—94	3	7	3	5	2
95—99	2	2	4	6	6
100-104	6	3	1	2	7
105-109	4	4	1	3	6
110-114	2	3	1	3	3
115-119	2	0	0	2	2
120-124	3	0	3	0	4
125-129	3	0	2	3	1
130-134	3	0	1	1	2
135-139	0	0	1	1	1
140-144	2	0	0	2	2
145-149	1	0	1	0	0
150-154	0	0	0	1	0
155-159	1	0	1	1	0
160-164	0	0	0	0	0
165-169	0	0	0	0	1
N	50	50	50	50	50
Mean	101	80	89	98	101
S. D.	20.57	17.21	25.76	23.91	20.53
25%ile	82	66	74	80	86
50%ile	101	78	84	94	102
75%ile	120	94	99	112	114
Q	19	14	12.5	16	14

The factor of nationality

Table 6 presents the distribution of the intelligence quotients earned by the children of the five civilized tribes on the Stanford-Binet scale.

The average I Q's are as follows: Choctaw, 98; Chickasaw, 87; Cherokee, 87. Seminole, 84; Creek, 96. Arranging the tribes in rank order, highest to lowest, we have: Choctaw, Creek, Chickasaw and Cherokee tied, and Seminole. A comparison of the standard deviations show that the Cherokee are the most variable, S. D. 26.03, while the least variation is shown by the Seminoles, S. D. 18.09.

Table 7 presents the distribution of the intelligence quotients earned by the reservation Indian children of the five civilized tribes on the Pintner-Paterson scale.

On the Pintner-Paterson performance test the highest average of I Q's was made by the Choctaws and the Creeks whose averages are the same, 101. Next in order came the Seminoles, 98; the Cherokees, 89; and the Chickasaws, 80. The Chickasaws fell considerably below the levels attained by the other tribes on this test. A comparison of the standard deviations shows that the Cherokees are the most variable, S. D. 25.76, while the Chickasaws show the least variability, S. D. 17.21.

Table No. 8 presents the distribution of the intelligence quotients earned by the Indian reservation children on the Goodenough scale.

As determined by the I Q's earned on this test the Creeks rank first with an average I Q of 104; the Choctaws second, average I Q 100; and then in order come the Seminoles, 91; the Chickasaws, 90; and the Cherokees, 80.

From the standard deviations, the greatest variability is shown by the Choctaws, S. D. 35.51; and the least by the Chickasaws, S. D. 20.07.

Similarities and differences between any two groups may also be determined by the percentage of overlapping,

i. e., the percentage of one group that reaches or exceeds the median of the other group. An overlapping of fifty per cent (50%) means that the medians are the same, while for practical purposes of school education any percentage of overlapping between 40 and 60 represents a very small difference with very great overlapping. Table No. 9 presents these measures.

TABLE NO. 8

Distribution of Goodenough intelligence quotients for full blood Choctaw, Chickasaw, Seminole, Cherokee, and Creek groups.

IQ	*Choctaw*	*Chickasaw*	*Cherokee*	*Seminole*	*Creek*
40—44	0	1	1	2	0
45—49	0	0	1	1	0
50—54	3	2	4	4	1
55—59	3	1	4	3	2
60—64	5	3	5	3	3
65—69	0	0	4	2	1
70—74	3	6	2	4	3
75—79	2	3	1	0	2
80—84	3	3	6	4	4
85—89	1	5	6	3	1
90—94	4	3	1	3	7
95—99	3	7	2	2	4
100-104	3	3	6	5	3
105-109	2	2	3	0	1
110-114	1	6	1	2	7
115-119	2	3	1	1	2
120-124	3	1	1	0	0
125-129	3	1	0	3	2
130-134	1	0	0	1	2
135-139	1	0	0	1	1
140-144	1	0	0	3	1
145-149	1	0	0	0	1
150-154	1	0	0	1	0
155 & above	4	0	1	2	2
N	50	50	50	50	50
Mean	100	90	80	91	104
S. D.	35.51	20.07	20.84	32.32	28.90
25%ile	72	74	62	64	80
50%ile	96	91	82	88	96
75%	124	106	100	113	113
Q	26	16	19	25.5	16.5

If we consider the results found on the Binet tests and apply the rule, we will place the Choctaws and the Creeks in a class to themselves while the Chickasaws. Cherokees and Seminoles fall into another class. The latter tribes failed to secure large enough percentages of overlapping to be judged as having the same central tendencies as the Choctaws and the Creeks.

Applying the same test to the results of the Pintner-Paterson scale, we find the Chickasaws and Cherokees grouped together as securing the lowest percentages of overlapping while the test would place the Choctaws, Seminoles, and the Creeks in another group.

On the Goodenough test only the Cherokees fail to secure large enough percentages of overlapping to be classed with the other tribes. The central tendencies of the Choctaws, Chickasaws, Seminoles, and the Creeks are "for practical purposes" the same on the Goodenough test results.

TABLE NO. 9

1. Showing percentage of overlapping on ***Stanford-Binet Scale.*** (Percentage of one group reaching or exceeding the median I Q of another group).

	Med. IQ	*Choct*	*Chick*	*Chero*	*Semin*	*Creek*
Choctaw	98	....	60	62	68	52
Chickasaw	91	38	....	56	62	38
Cherokee	88	34	44	....	58	36
Seminole	83	28	38	42	....	26
Creek	98	52	60	64	74	....

II. Showing percentage of overlapping on ***Pintner-Paterson Scale.***

	Med. IQ	*Choct*	*Chick*	*Chero*	*Semin*	*Creek*
Choctaw	101	....	80	73	59	49
Chickasaw	78	19	....	44	27	18
Cherokee	84	24	67	....	33	23
Seminole	94	37	79	70	....	36
Creek	102	53	82	77	69	....

III. Showing percentage of overlapping on the ***Good-enough Scale.***

	Med. IQ	*Choct*	*Chick*	*Chero*	*Semin*	*Creek*
Choctaw	96	....	58	66	61	51
Chickasaw	91	43	....	66	56	43
Cherokee	82	29	32	....	37	29
Seminole	88	41	47	59	....	41
Creek	96	50	63	73	67	....

This table reads: The median I Q of the Choctaws on the Binet scale is 98. Sixty per cent (60%) of the Choctaws exceed the median I Q of the Chickasaws. Sixty-two per cent (62%) of the Choctaws exceeded the median I Q of the Cherokees. The reading of the other scales is similar.

Discussion of statistical treatment and some conclusions.

The reliability of the difference between the average I Q's of any two tribal groups was found by Garrett's formulae: 13 p. 121 and 19 p. 129. (5, pp. 121 and 129).

Garrett (5, p. 130) says:

"An obtained difference is interpreted in terms of its standard error in exactly the same way in which an obtained average is interpreted in terms of its standard error. Thus we may say that the chances are 68 in 100 that the obtained difference of .19 does not diverge from the true difference by more than plus or minus .1857; and that the chances are 99 in 100 that .19 does not differ from the true difference by more than 3 times plus or minus .1857—by more than plus or minus .56 . . . "

Garrett (5, p. 153) further states:

"It is customary to take a D-sigma-diff. of 3 as indicative of complete reliability, since minus 3 sigma includes practically all of the cases in the 'distribution of differences' below the mean . . . . A D-sigma-diff. greater than 3 is to be taken as indicating just so much added reliability."

The reliability of the difference found between any two tribal groups as to average I Q's was calculated and is shown in the tables entitled: "Unreliability of difference between any two nationalities."

TABLE NO. 10

Unreliability of the difference between the average Stanford-Binet I Q's of any two nationalities.

	Creek 96 Choct 98	Creek 96 Chick 87	Creek 96 Semin 84	Creek 96 Chero 87
Difference	2	9	12	9
SD of Difference	4.39	4.09	3.85	4.67
Ratio D to SD Dif.	.46	1.93	3.12	1.93

	Choct 98 Chick 87	Choct 98 Chero 87	Choct 98 Semin 84	Choct 98 Creek 96
Difference	11	11	14	2
SD of Difference	4.41	4.95	4.19	4.39
Ratio D to SD Dif.	2.49	2.22	3.34	.46

	Semin 84 Choct 98	Semin 84 Chick 87	Semin 84 Creek 96	Semin 84 Chero 87
Difference	14	3	12	3
SD of Difference	4.19	3.88	3.85	4.48
Ratio D to SD Dif.	3.34	.77	3.12	.67

	Chero 87 Choct 98	Chero 87 Chick 87	Chero 87 Semin 84	Chero 87 Creek 96
Difference	11	0	3	9
SD of Difference	4.95	0	4.48	4.67
Ratio D. to SD Dif.	2.22	0	.67	1.93

	Chick 87 Choct 98	Chick 87 Chero 87	Chick 87 Semin 84	Chick 87 Creek 96
Difference	11	0	3	9
SD of Difference	4.41	0	3.88	4.09
Ratio D to SD Dif.	2.49	0	.77	1.93

From the tables with the above heading we draw the following conclusions:

	Ratio:
1. On the Stanford-Binet tests:	
The Creeks excel the Seminoles	3.12
The Choctaws excel the Seminoles	3.34
2. On the Pintner-Paterson tests:	
The Creeks excel the Chickasaws	5.55
The Choctaws excel the Chickasaws	5.57
The Seminoles excel the Chickasaws	4.33
3. On the Goodenough tests:	
The Creeks excel the Cherokees	4.78
The Choctaws excel the Cherokees	3.44

These differences, as indicated by the ratios, D to SD Dif., being greater than 3, are completely reliable, according to Garrett's statement, and they show that the Creek and Choctaw groups lead all of the other Indian groups here considered on all of the tests.

If we compare the two leading tribal groups, the Choctaws and the Creeks, on the Stanford-Binet test results, we find that the Choctaws excel the Creeks by a ratio of .46. This ratio is not reliable, but indicates that the chances are 67 out of 100 that the true difference will be greater than zero.

TABLE NO. 11

Unreliability of the difference between the average Good-enough I Q's of any two nationalities.

	Creek 104 Choct 100	Creek 104 Chick 90	Creek 104 Semin 91	Creek 104 Chero 80
Difference	4	14	13	24
SD of Difference	6.47	4.97	6.13	5.02
Ratio D to SD Dif.	.62	2.82	2.12	4.78

	Choct 100 Chick 90	Choct 100 Chero 80	Choct 100 Semin 91	Choct 100 Creek 104
Difference	10	20	9	4
SD of Difference	5.76	5.81	6.79	6.47
Ratio D to SD Dif.	1.76	3.44	1.33	.62

	Semin 91 Choct 100	Semin 91 Chick 90	Semin 91 Creek 104	Semin 91 Chero 80
Difference	9	1	13	11
SD of Difference	6.79	5.38	6.13	5.43
Ratio D to SD Dif.	1.33	.19	2.12	1.84

	Chero 80 Choct 100	Chero 80 Chick 90	Chero 80 Semin 91	Chero 80 Creek 104
Difference	20	10	11	24
SD of Difference	5.81	4.08	5.43	5.02
Ratio D to SD Dif.	3.44	2.45	1.84	4.78

	Chick 90 Choct 100	Chick 90 Chero 80	Chick 90 Semin 91	Chick 90 Creek 104
Difference	10	10	1	14
SD of Difference	5.76	4.08	5.38	4.97
Ratio D to SD Dif.	1.76	2.45	.19	2.82

The reliability of the difference between the Choctaws and the other full blood tribes is greater than the reliability of the differences between the Creeks and the respective full blood tribes. This indicates a superiority of the Choctaws over the other full blood tribal groups herein considered on the Stanford-Binet tests.

Next assembling the ratios which are too small to be completely reliable, we find them large enough to indicate significant differences. They are as follows:

1. On the Stanford-Binet tests:	Ratio:
The Choctaws excel the Creeks	.46
The Choctaws excel the Cherokees	2.22
The Choctaws excel the Chickasaws	2.49
The Creeks excel the Chickasaws	1.93
The Creeks excel the Cherokees	1.93
The Cherokees and Chickasaws are equal.	

The Seminoles are surpassed by every other tribal group included in the study.

2. On the Pintner-Paterson tests:	
The Creeks and Choctaws are equal.	
The Creeks excel the Seminoles	.67
The Creeks excel the Cherokees	2.53
The Choctaws excel the Cherokees	2.57
The Choctaws excel the Seminoles	.67
The Seminoles excel the Cherokees	1.81
The Cherokees excel the Chickasaws	2.06

3. On the Goodenough tests:	
The Creeks excel the Choctaws	.62
The Creeks excel the Chickasaws	2.82
The Creeks excel the Seminoles	2.12
The Choctaws excel the Chickasaws	1.76
The Choctaws excel the Seminoles	1.33
The Seminoles excel the Chickasaws	.19
The Seminoles excel the Cherokees	1.84
The Chickasaws excel the Cherokees	2.45

TABLE NO. 12

Unreliability of the difference between the average Pintner-Paterson I Q's of any two nationalities.

	Creek 101 Choct 101	Creek 101 Chick 80	Creek 101 Semin 98	Creek 101 Chero 89
Difference	0	21	3	12
SD of Difference	0	3.78	4.45	4.65
Ratio D to SD Dif.	0	5.55	.67	2.58
	Choct 101 Chick 80	Choct 101 Chero 89	Choct 101 Semin 98	Choct 101 Creek 101
Difference	21	12	3	0
SD of Difference	3.79	4.66	4.46	0
Ratio D to SD Dif.	5.57	2.57	.67	0
	Semin 98 Choct 101	Semin 98 Chick 80	Semin 98 Creek 101	Semin 98 Chero 89
Difference	3	18	3	9
SD of Difference	4.46	4.16	4.45	4.96
Ratio D to SD Dif	.67	4.33	.67	1.81
	Chero 89 Choct 101	Chero 89 Chick 80	Chero 89 Semin 98	Chero 89 Creek 101
Difference	12	9	9	12
SD of Difference	4.66	4.37	4.96	4.65
Ratio D to SD Dif.	2.57	2.06	1.81	2.58
	Chick 80 Choct 101	Chick 80 Chero 89	Chick 80 Semin 98	Chick 80 Creek 101
Difference	21	9	18	21
SD of Difference	3.79	4.37	4.16	3.78
Ratio D to SD Dif.	5.57	2.06	4.33	5.55

It is noteworthy that the Seminoles who were uniformly surpassed by every other tribal group included in this study on the Stanford-Binet tests, make a much better showing on the Pintner-Patterson test. They excel the Chickasaws by a completely reliable difference: ratio 4.33. They excel the Cherokees by a ratio of 1.81. They are themselves surpassed only by the Creeks and Choctaws and then only by the low ratio of .67 in each case.

The better record made by the Seminoles on the Pintner-Paterson test perhaps indicates one of two things: either the Seminoles have a language handicap on the verbal Stanford-Binet tests or they possess a "mechanical" intelligence which shows itself on the performance tests.

The writer has observed that the Seminole children are loyal to their own tongue. They talk their native language when alone with each other. Otherwise their tribal loyalty did not appear so good: some of the children would come to the teacher and "tell on" the other children, saying, "They are talking Seminole." This apparent aversion to speaking the English and the consequent lack of spontaneous practice in the use of the English would tend to give them a language handicap on the verbal Stanford-Binet tests.

On the Goodenough test the Seminoles again make a respectable showing, outdistancing the Chickasaws by a small ratio, (.10), and the Cherokees by a more significant ratio, (1.84). They are themselves excelled only by the Choctaws, (ratio 1.33), and by the Creeks, (ratio 2.12).

It is interesting in this connection to note the conclusion of Hansen (17, pp. 3-4) who made a study of the results of verbal and non-verbal tests given to Indians. He concludes that the verbal test, as the Stanford-Binet, places a language handicap upon the Indian. In the tests given by Hansen, the Indians made a better showing on the non-verbal tests than on the verbal tests.

While the Choctaws excel the Creeks by a small ratio, (.46), on the Stanford-Binet tests, the Creeks excelled the

Choctaws by a slightly larger ratio, (.62) on the Goodenough tests. The Creeks and the Choctaws equal each other on the Pintner-Paterson tests. Thus the Choctaws show a slight superiority to the Creeks on verbal tests, while the Creeks are slightly superior to the Choctaws on the non-verbal tests. We conclude, therefore, that the differences found between the Choctaws and the Creeks are not reliable and insofar as the test results from the three types of tests used are concerned, the Choctaws and the Creeks appear equal to each other in intelligence and generally superior to the other tribal groups herein studied in intelligence.

The Cherokees and the Chickasaws do equally well on the Stanford-Binet tests. The Cherokees excel the Chickasaws on the Pintner-Paterson tests, (ratio, 2.06). The Chickasaws excel the Cherokees on the Goodenough tests (ratio, 2.45). The Cherokees are, therefore, slightly superior on the verbal Binet tests while the Chickasaws excel the Cherokees in the type of intelligence indicated by the Goodenough drawing intelligence test.

The full blood Indian groups earn a higher rating on the Pintner-Paterson performance test than they do on the verbal Stanford-Binet tests.

CHAPTER VI

DISCUSSION, SUMMARY AND CONCLUSIONS

DISCUSSION: Conditions met in conducting the experiment

After permission was secured from the Superintendent of the Five Civilized Tribes to make the investigation and after the necessary material for giving the three individual tests had been gathered, the author visited each of the reservation schools in turn and made arrangements to live either in the school or in a home nearby.

It was found possible by working during school hours, after school, and sometimes at night, to test as many as eight or ten children in one day, giving each one the three individual tests. The contacts within the schools proved valuable as they gave opportunities for getting suitable rapport with the children to be tested—a thing so much insisted upon by Terman.

This investigation, therefore, involved travelling over hundreds of miles of territory and visiting nine different academies, scattered over the eastern half of the State of Oklahoma, partcularly in the section formerly known as the Indian Territory. The daily testing program rendered it necessary that the scoring of the tests be postponed until the field work was completed.

The fact that the tests could not be scored immediately was an advantage for after the completion of the field work the author turned attention to the scoring of the papers and the tabulation of the results without the distractions that would have been encountered in the field.

Our finding of an average Stanford-Binet I. Q. of 90 represents an I. Q. of approximately 20 points on the

average above the I. Q.'s as determined by group testing. There are three possible explanations of the high average obtained: (1) The groups tested represent highly selected individuals and do not constitute a random sampling and hence the results are not typical of Indians in general, or, (2) The average score made by Indians on the Stanford-Binet individual tests is higher than the same Indians would make on the group tests, or, (3) The groups tested are more intelligent than Indians previously tested.

It is conceded that the experimental groups represent selected individuals and it is probable that these individuals have higher I. Q.'s than the general run of the tribes they represent.

Unfortunately we do not have a reported experiment where both the Stanford-Binet and a group intelligence test were given to the same group of children made up of full blood Indians. This would be an interesting experiment for some one to carry out. Until such an investigation is made we cannot be certain that Indians do better on the individual intelligence tests than the same Indians would do on group intelligence tests.

There remains the third possibility: that the groups tested are actually more intelligent than Indian groups previously tested. Since our results are based upon ***individual*** intelligence tests and since the results reported for other Indian groups are based on group intelligence tests, we do not have identical bases for comparison. The differences found may be due to the difference in the type of test used. Our data indicate that Indians make higher average I. Q.'s on the individual Stanford-Binet, on the Pintner-Paterson Performance Test, and on the Goodenough Test, than they have heretofore been able to make on any of the various group tests used in testing them.

One or two practical suggestions may be made here as growing out of the research.

1. On account of very great overageness and disparity in physical development the older children are em-

barassed by being placed in classes with children much younger and less developed than themselves. The younger children deride the other ones, saying, "They are dumb. Look how big they are, yet they are in our classes." Special "opportunity" rooms should be provided where the older children could be given special attention and coached so as to move more rapidly through the courses.

2. The curricula should be more flexible. There is too much sameness in method and content in the courses offered by the various schools. Committees should be appointed who will study constantly to adapt the courses to the individual needs of the children. Uniformity is not as desirable as modifications which will take care of individual differences of children.

CONCLUSIONS:

1. The average I. Q.'s as determined by these tests are: Stanford-Binet, 90; Pintner-Paterson, 93; and Goodenough, 92. These I. Q.'s are higher than those ordinarily obtained by the Indians on group intelligence tests.

2. Of the 250 full blood Indians tested 15 were found whose Stanford-Binet I. Q.'s were 130 and above. From the case studies made of 11 of these high I. Q. children, it was found that there is nothing striking or unusual in their parentage. Their parents appear to have been just ordinary, every-day Indians.

3. The average I. Q's of 5,159 white children ranging from kindergarten through the third grade and based on Binet-Simon tests given in the Oklahoma City schools is 103. The average I. Q. of our 250 Indian children in the first three grades based on the Binet-Simon tests is 90. This is an average difference of 13 points in favor of the white children. The range of I. Q.'s for Indian children is from 40 to 153. We thus find quite a wide variation in intelligence levels of the Indian children as we find with white children—all the way from positive feeble-mindedness to genius level. While the average for the Indian group is considerably below that of the white group we

nevertheless find individual Indian children ranking in the very superior and genius classes.

4. The groups representing the Choctaws and the Creeks are found equal to each other in intelligence and are generally superior in intelligence to the other full blood tribal groups herein considered.

5. The groups representing the Cherokees and the Chickasaws are found equal to each other in intelligence.

6. The Seminole group is surpassed by all the full blood groups on the verbal Stanford-Binet tests. On the Pintner-Paterson tests, however, the Seminoles surpass the Chickasaws by a reliable difference (ratio, 4.33) and the Cherokees by a significant difference (ratio, 1.81). The Seminoles are excelled by the Creeks and the Choctaws by a small and unreliable difference (ratio in each case, .67).

7. On the non-verbal tests the Seminoles appear superior to the Chickasaws and to the Cherokees, but inferior to the Creeks and to the Choctaws.

8. In the light of all the test results, we have to rank the Seminoles in between the Creeks and Choctaws on the one hand and the Chickasaws and Cherokees on the other hand.

9. No significant differences were found between the boys and the girls by the various tests. The average difference in favor of the girls on the Stanford-Binet was 6.14. When the P. E. (diff.) was calculated the difference was found to be not completely reliable. Similarly for the other differences found.

10. The older children were found to do better on the Pintner-Paterson tests than on the Stanford-Binet. This is in agreement with the common finding that the old and dull do better on Pintner-Paterson. Dr. Mary Vanuxem (29, p. 10) says in this connection:

"It will be seen that a majority of the morons obtained a higher score in the Performance Tests than in the

Stanford Revision, that in the two sets of tests the scores of the imbeciles ran almost ***pari passu;*** and that the scores of the idiots who were chronologically over 16 years of age were lower in the Performance Tests than in the Stanford Revision." Of the morons tested, "60.1% had higher scores in the Performance Tests than in the Stanford Revision. This difference ranged from one to five years."

CHAPTER VII.

PROBLEMS FOR FURTHER STUDY

1. Compare the mixed blood Indians as to effect of degree of blood. Garth found that half bloods excel the full bloods in intelligence. Will additional amounts of white blood give corresponding increments in intelligence? Will a less amount than half of white blood reduce the intelligence rating in proportion?

2. We do not appear to have any data as to retests of the same children over a period of time. The young Indian children should be given intelligence tests upon entering school and retested from time to time. This would supply valuable information as to the constancy of the I Q, and for further studies of the effects of a possible language handicap upon the test results.

3. A study might be made of the achievement of the children in the various school subjects. From these results and the results of intelligence tests, accomplishment ratios could be worked out.

4. An interesting study could be made with a battery of non-verbal tests, such as Pintner-Paterson Performance Tests, Pintner's non-language tests, Goodenough Intelligence Test, and, in addition special aptitudes tests, such as Stenquist Mechanical Aptitude Tests, tests in handwriting, and the like. The purpose would be to determine whether or not the Indian possesses mechanical aptitudes in greater degree than white children and just what aptitudes might be revealed by the various tests.

5. A study might be made to determine the differences in intelligence and differences in achievement due to

sex. Full blood boys would be compared with full blood girls of the same tribe to rule out the factor of tribal differences. The same could be done for half bloods, and one-quarter bloods.

6. Further comparative studies are needed to determine the rating of the Indian as compared to the negro. In one such comparison the Indian appeared at a disadvantage. The writer would like to see a study made between the Five Tribes and a typical group of Southern negroes.

7. There is need of a study in which the same Indian groups are given both individual and group tests. The object would be to determine whether or not the Indian children make higher I. Q.'s on the individual intelligence tests.

Stanford Revision, that in the two sets of tests the scores of the imbeciles ran almost ***pari passu;*** and that the scores of the idiots who were chronologically over 16 years of age were lower in the Performance Tests than in the Stanford Revision." Of the morons tested, "60.1% had higher scores in the Performance Tests than in the Stanford Revision. This difference ranged from one to five years."

CHAPTER VII.

PROBLEMS FOR FURTHER STUDY

1. Compare the mixed blood Indians as to effect of degree of blood. Garth found that half bloods excel the full bloods in intelligence. Will additional amounts of white blood give corresponding increments in intelligence? Will a less amount than half of white blood reduce the intelligence rating in proportion?

2. We do not appear to have any data as to retests of the same children over a period of time. The young Indian children should be given intelligence tests upon entering school and retested from time to time. This would supply valuable information as to the constancy of the I Q, and for further studies of the effects of a possible language handicap upon the test results.

3. A study might be made of the achievement of the children in the various school subjects. From these results and the results of intelligence tests, accomplishment ratios could be worked out.

4. An interesting study could be made with a battery of non-verbal tests, such as Pintner-Paterson Performance Tests, Pintner's non-language tests, Goodenough Intelligence Test, and, in addition special aptitudes tests, such as Stenquist Mechanical Aptitude Tests, tests in handwriting, and the like. The purpose would be to determine whether or not the Indian possesses mechanical aptitudes in greater degree than white children and just what aptitudes might be revealed by the various tests.

5. A study might be made to determine the differences in intelligence and differences in achievement due to

sex. Full blood boys would be compared with full blood girls of the same tribe to rule out the factor of tribal differences. The same could be done for half bloods, and one-quarter bloods.

6. Further comparative studies are needed to determine the rating of the Indian as compared to the negro. In one such comparison the Indian appeared at a disadvantage. The writer would like to see a study made between the Five Tribes and a typical group of Southern negroes.

7. There is need of a study in which the same Indian groups are given both individual and group tests. The object would be to determine whether or not the Indian children make higher I. Q.'s on the individual intelligence tests.

BIBLIOGRAPHY

1. Bache, R. Meade (and Witmer), 1895: Reaction Time with Reference to Race. Psy. Rev., Vol. 2, pp. 474-486.

2. Bruner, F. G., 1908: The Hearing of Primitive Peoples. Arch. Psy., No. 11, Columbia University, New York.

3. Cattell, Psyche. School and Society, March 29, 1930, p. 442.

4. Fitzgerald, J. A., and Ludeman, W. W., The Intelligence of Indian Children. J. Comp. Psy., Vol. 6, pp. 317-328.

5. Garrett, Henry E. Statistics in Psycohology and Education, Longmans, Green & Co., 1926, pp. 128-134.

6. Garth, Thomas R., and Garrett, James. A Comparative Study of the Intelligence of Indians in United States Indian Schools and in the Public or Common Schools. School and Society, Vol. 27, Feb. 11, 1928, pp. 178-184, No. 685.

7. Garth, T. R. The Results of Some Tests on Full and Mixed Blood Indians, J. Applied Psych., 1921, 5, pp. 359-372.

8. Garth, T. R. A Comparison of Mental Abilities of Mixed and Full Blood Indians on a Basis of Education. Psych. Rev. Vol. 29, p. 236.

9. Garth, T. R., and Serafini, T. J., Dewey Dutton. The Intelligence of Full Blood Indians. J. of Applied Psych., Dec. 1925, pp. 382-389, Vol. 9.

10. Garth, T. R. A Comparison of the Intelligence of Mexican and Mixed and Full Blood Indian Children. Psy. Rev., Vol. 30, pp. 388-401.

11. Garth, T. R. Race Psychology, A Study of Racial Mental Differences, 1931. McGraw Hill Book Co., Inc., New York.

12. Garth, T. R., assisted by Schuelke, Nathan, and Abell, Wendell. The Intelligence of Mixed Blood Indians. J. App. Psy., Vol. II., No 4, pp. 268-275.

13. Garth, T. R., Hale W. Smith, and Wendell Abell. The Intelligence and Achievement of Full Blood Indians. J. App. Psy., Vol. 12, No. 5., pp. 511-516.

14. Goodenough, Florence L. Measurement of Intelligence by Drawings, 1926. World Book Co., Chicago.

15. Goodenough, Florence L. Racial Differences in the Intelligence of School Children. J. Exp. Psy., Vol. 9, p. 394.

16. Hall, G. Stanley, Educational Problems, Vol. 1, p. 393, New York, Appleton, 1911.

17. Hansen, Harvey C. Correlation Between Verbal Intelligence Tests and Non-Verbal Intelligence Tests of Indian Pupils. An unpublished master's thesis, University of Oklahoma, 1927, pp. 3-4.

18. Hunter, W. S. and Sommermeier, Eloise. The Relation of the Degree of Indian Blood to Score on the Otis Intelligence Test. J. of Comp. Psych., Vol. 2, pp. 257-277.

19. Jamieson, E., and P. Sandiford. The Mental Capacity of Southern Ontario Indians. J. of Ed. Psy., Vol. 19, No. 5, pp. 313-328

20. McCarty: Children's Drawings. Child Study Committee of International Kg. Union. 1919-22. pp. 276-277.

21. Pintner, R., and Paterson, D. A Scale of Performance Tests, New York, Appleton, 1917.

22. Report of the National Advisory Committee on Education. Federal Relations to Education. Part 1. Committee Findings and Recommendations. Washington, D. C., Oct. 1931, p. 53.

23. Rowe, E. C. Five Hundred Forty Seven White and Two Hundred Sixty-Eight Indian Children Tested by the Binet-Simon Tests Ped. Sem., Vol. 21, pp. 452-469.

24. Smith, Owen D. Quoted by Garth in Race Psychology, p. 75. (See No. 11 above).

25. Terman, L. M. The Intelligence of School Children, Boston, 1919 Houghton Mifflin.

26. Terman, L. M. The Measurement of Intelligence, Boston, Houghton Mifflin, 1919.

27. Terman, L. M. The Stanford Revision and Some Results from 1000 Non-Selected Children. J. Ed. Psy., 1915, pp. 551.

28. Woodworth, R. S., 1910. Racial Differences in Mental Tests. Science, N. S., Vol. 31, pp. 171-186.

29. Vanuxem, Mary. Education of Feeble-Minded Women. T. C. Columbia University, Contributions to Education, No. 174.

APPENDIX

TABLE NO. 13

Age-Grade Distribution of 250 full blood Indians of the Five Civilized Tribes in Oklahoma reservation schools.

	First Grd.		Second	Grd.-Third	Grd.
(Age)	Boys	Girls	Boys	Girls-Boys	Girls
5——6	1	3	0	1 0	0
6——7	5	16	1	2 0	0
7——8	10	11	1	0 0	0
8——9	10	16	2	4 1	1
9—10	10	10	7	8 5	6
10—11	2	3	5	2 3	4
11—12	2	1	4	5 3	7
12—13	2	1	2	2 10	7
13—14	3	0	1	2 7	5
14—15	0	1	2	3 4	6
15—16	0	0	1	1 1	2
16—17	0	0	1	2 2	2
17—18	1	0	1	1 0	2
18—19	1	0	0	0 1	1
N	47	62	28	33 37	43
Mean	9.33	8.13	11.20	11.17 12.60	12.73
S. D.	2.65	1.69	2.60	2.86 2.18	2.63

TABLE NO. 14

Table showing the occupation of the parents of the children in reservation schools making up the experimental groups.

OCCUPATIONS OF PARENTS

	Farmers	Day Laborers	Business	Profes.	Dead
Seminoles	43	4	1	0	2
Choctaws	37	6	2	2	3
Creeks	35	9	3	0	3
Chickasaws	30	6	4	0	0
Cherokees	28	6	0	0	16

It appears from this table that very few Indian parents were engaged in business or professional life. The vast majority are farmers and day laborers.

TABLE NO. 15

ANALYSIS OF OVER-AGE PERCENTAGES

The overageness of the tribal groups compared with that existing in the Baltimore elementary schools.

Group	Percent 1 year Over-Age	Percent 2 Years Over-Age	Percent 3 Years Over-Age	Percent Above 3 years Over-Age	Total Percent Over-Age
Baltimore Elementary Schools	20.	9.6	3.9	1.9	35.4
Choctaws	20.	20.	14.	12.	66.
Creeks	28.	12.	10.	26.	76.
Seminoles	16.	28.	10.	24.	78.
Chickasaws	12.	16.	10.	46.	84.
Cherokees	16.	12.	10.	50.	88.

This table shows clearly the high percentage of overageness as compared with white children in the Baltimore elementary schools. All of the tribal groups have a heavy percentage of overageness. The Cherokees have 50% above three years of over-ageness. The Choctaws have the least percentage. Only in the one-year of overageness group do the Baltimore children have anything like as large a percentage of overageness.

TABLE NO. 16

Table showing ages of subjects in the different tribal groups consisting of members of the Five Civilized Tribes of Oklahoma in reservation schools.

	1st. Grade	2nd. Grade	3rd. Grade	Whole Group	Boys	Girls
CHOCTAWS						
Number	26	15	9	50	16	34
Av. Years	8.07	9.9	10.73	9.08	9.24	9.03
Standard Dev.	1.65	2.5	2.12	2.31	2.44	1.81
SEMINOLES						
Number	31	11.	8	50	28	22.
Av. Years	8.40	11.83	12.44	9.80	9.95	9.60
Standard Dev.	1.34	2.37	1.37	2.42	2.53	2.67
CHICKASAWS						
Number	19	12	19	50	1	49
Av. Years	8.46	12.09	13.82	11.23	16.33	11.13
Standard Dev.	2.24	2.31	1.96	3.13	0	3.13
CREEKS						
Number	25	11	14	50	42	8
Av. Years	9.18	10.23	11.55	10.08	10.48	7.97
Standard Dev.	3.24	1.87	2.04	2.86	3.87	1.29
CHEROKEES						
Number	8	12	30	50	25	25
Av. Years	9.31	11.88	12.81	12.03	13.18	10.88
Standard Dev.	2.76	3.81	2.96	3.27	2.53	3.26

TABLE NO. 17

Table showing the distribution of Stanford-Binet I. Q.'s of the tribal groups compared with the I Q.'s of Terman's 905 unselected children.

	Terman	Chick	Choct	Creeks	Chero	Semin
Lower Quartile:	56-93	41-71	61-78	48-79	42-62	50-70
Middle Fifty %:	93-108	71-103	78-110	79-110	62-106	70-96
Upper Quartile:	108-145	103-122	110-154	110-139	106-153	97-114
Below 96 I Q:	31%	62%	42%	46%	62%	72%
Between 96-105:	34%	18%	22%	20%	10%	18%
Above 106 I. Q:	35%	20%	36%	34%	28%	10%

NOTES:

The Seminoles have a high per cent of low I Q's (72%), and only ten per cent. (10%) are above 106.

The Chickasaws and the Cherokees tie as to the per cent of low I Q's. The Cherokees have a slightly higher per cent of I Q's above 106.

VITA

Bonnie Lela Crump (nee Massey) was born at Seelig, Ark., (now Aubrey, Ark.) on June 2, 1890. She was educated in the grades at Mountain Home, Ark., and in Comanche, Okla. High School, graduating from the latter institution in 1907. She received her A. B. degree from Southeastern State Teachers College in 1921. The M. A. degree was conferred by the University of Oklahoma in 1924. Columbia University granted her the M. A. degree in 1925.

Mrs. Crump has had a varied experience as teacher: four years as primary teacher in Julius Freyhan School, St. Francisville, La.; two years as Primary Critic Teacher in Southeastern State Teachers College, Durant, Okla.; and three summers as Associate Professor of Education at Southeastern. The summer of 1932 she served as Professor of Education at Oklahoma Baptist University, Shawnee, Okla., supervising the practice teaching in Kindergarten and elementary grades and teaching college subjects in Education.

Mrs. Crump has published a number of articles in national education magazines, such as Normal Instructor and Primary Plans, Primary Education, and contributed a Book Pageant to the book: "Plays and Pageants" published by the Educator Publishing Co. In 1929 she published her first book: "Bobby Squirrel's Secrets," The Gorham Press, Boston, Mass. She has revised a series of readers for children and written two books on nature study for primary grades. She is a member of A. A. U. W., Blue Blue Violets, Phi Beta Sigma, P. T. A. and O. E. A., and the Hawthorne Club (Shawnee). She has served for two years as Kindergarten Extension Chairman of the Oklahoma P. T. A. For four years she has served as Field Secretary of the National Kindergarten Association for the State of Oklahoma.

September 1932.